

AMENDMENTS TO THE DRAWINGS

Attached is one replacement drawing sheet including FIGS. 13(a) and (b) which should replace the original drawing sheet including FIGS. 13(a) and (b). In the replacement drawing sheet, Fig. 13(b) has been amended to change the spelling of "lows" to --rows--.

Replacement Drawing Sheet

REMARKS

Favorable reconsideration of this application is respectfully requested in view of the following remarks.

The portion of specification briefly describing the drawing figures has been amended to refer to Fig. 8(d). Accordingly, withdrawal of the objection to the specification is respectfully requested

Submitted with this Amendment is a replacement drawing sheet setting forth a change to Fig. 13(b) involving changing the term "low" to --row--. The corresponding description in the specification has also been amended.

The dependency of Claim 8 has been changed to address the claim objection on page two of the Official Action. Accordingly, withdrawal of the claim objection is respectfully requested.

Claims 5-8 have been amended to address the various issues raised on pages three and four of the Official Action. In particular, Claim 5 has been amended to recite that the peak row detecting means calculates the total pressure of a predetermined number of rows, and to also recite that the peak row detecting means defines as a peak row one of the predetermined number of rows having the maximum total.

In light of the question raised in the Official Action concerning the claimed lateral width calculating means, that portion of Claim 5 has been amended. As discussed in paragraph 0042 on page 17 of the present application, Fig. 14 illustrates an example of a pressure distribution across the vehicle seat when an adult passenger is seated. In Fig. 14, an array of rows, including the peak row, is outlined in bold. The peak row (row 5) and the array of rows (rows 4, 5 and 6)

including such peak row are derived from the example shown in Figs. 13(a) and (b). As discussed in paragraph 0042, each column in the outlined array of rows can be referred to as a peak column. For example, the cells of column 1 within the outlined array of rows (rows 4, 5 and 6) constitutes one peak column, the cells of column 2 within the outlined array of rows (4, 5 and 6) constitutes another peak column, the cells of column 3 within the outlined array of rows (4, 5 and 6) constitutes another peak column, etc. The total of the partial pressures in each peak column are calculated, and the total pressure in each peak column is compared to a corresponding predetermined width threshold NH. When the total pressure of a peak column is equal to or more than the corresponding predetermined width threshold, the total pressure is added to a count number which constitutes the lateral width.

To better set forth this aspect of the occupant detecting device, Claim 5 has been amended to recite that the lateral width calculating means calculates the total of the partial pressures of the cells per column in the predetermined number of rows, compares the obtained total of the partial pressures per column to a predetermined width threshold per column, and obtains the lateral width by counting the number of column(s) in which the total pressure exceeds the corresponding predetermined width threshold per column.

With respect to the question raised in the Official Action concerning the temperature sensor, Claim 5 has been amended to recite that the temperature sensor protects the temperature of the seating part of the vehicle seat.

Finally, addressing the question raised in the Official Action concerning the claimed lateral width, the Examiner's attention is directed to, for example, the

description in paragraph 0043 of the present application which notes that the output of the pressure sensor/cells changes as the temperature varies. As discussed at other portions of the application, temperature changes influence the hardness of the pad which can in turn affect the detected pressure. Claim 5 has been amended to reflect this observation.

The wording in Claim 7 has been changed in minor respects to more clearly describe the claimed subject matter supported by the description at, for example, paragraph 0070. Wording changes have also been incorporated into Claims 6 and 8.

In light of the foregoing amendments to Claims 5-8, withdrawal of the claim rejection based on the second paragraph of 35 U.S.C. § 112. is respectfully requested.

The Official Action sets forth two different prior art rejections of independent Claim 5 and dependent Claims 6-8. One rejection is based on the disclosure in U.S. Patent No. 6,609,054 to *Wallace* in view of the disclosure in Japanese Application Publication No. 2003-014564 to *Hiroaki*. The other rejection is based on the disclosure in Japanese Application Publication No. 2002-087132 to *Katsu*. Those rejections are respectfully traversed for at least the following reasons.

As discussed in the present application, the occupant detecting device at issue here is adapted to take into account the influence of temperature change on the accurate determination of the condition of the vehicle seat on which a passenger is seated. Thus, in addition to the peak row detecting means, the lateral width calculating means, and the determining means that determines the condition of the vehicle seat on which a passenger is seated based on the comparison of the

determined lateral width and the lateral width threshold, the claimed occupant detecting device includes a temperature sensor together with a correcting means. As claimed, the correcting means corrects at least one of the obtained lateral width or the lateral width threshold based on the temperature detected by the temperature sensor, thus taking into consideration changes of hardness of the pad influenced by temperature change.

Wallace discloses a vehicle occupant classification system that allows a vehicle occupant to be classified based on data obtained from an array of sensors. The disclosed system includes a calibration unit for normalizing sensor deflections in order to address variations in sensors and the effects of the seat trim and foam. Nowhere does *Wallace* disclose the need for, nor the desirability associated with, taking into account the influence of temperature change on, for example, the hardness of the pad forming a part of the vehicle seat which, in turn, affects the pressure detected by the plural cells in the vehicle seat.

On this point, the Official Action states that the discussion in lines 30-36 of column 11 of *Wallace* suggests the need for correcting sensor data due to environmental factors. A careful reading of the disclosure in *Wallace* reveals that this is not true. The discussion in lines 30-36 of column 11 of *Wallace* merely refers to variations in sensor sensitivities across the vehicle seat due to sensor manufacturing inconsistencies and the effects of the seat trim, foam, heaters and other seat variations. To address these variations in sensor sensitivities across the vehicle seat, *Wallace* describes providing the calibration unit which carries out a calibration process to normalize the sensor deflections and sensitivity within a single seat while also allowing variations across seats to be controlled. There is, however,

absolutely no disclosure or suggestion in *Wallace* of the need for addressing the influence of temperature change on, for example, the hardness of the pad in a vehicle seat which in turn can affect the pressure detected by plural cells arranged with the seating part of the vehicle.

The other two documents relied upon in the Official Action, *Hiroaki* and *Katsu*, do not make up for the aforementioned deficiencies in *Wallace*. *Hiroaki* discloses a seat sensor in which a plurality of sensing units 24 are divided into several areas E1-E5. Temperature sensing elements 25b1-25b5 are disposed in the areas E1-E5, and pressure values obtained from the pressure sensing units 24 are corrected based on temperature information sensed at the respective areas.

Katsu discloses a seat detecting device in which a plurality of cells 2 are arranged in the width-wise and longitudinal directions x, y of a seat SC.

However, neither *Katsu* nor *Hiroaki* describes utilizing a correcting means that corrects at least one of an obtained lateral width or a lateral width threshold, as those terms are recited in Claim 5, based on the temperature measured by a temperature sensor to thus take into account changes in hardness of the vehicle seat pad influenced by temperature changes. While *Hiroaki* mentions that pressure values obtained from pressure sensing units are corrected based on temperature information from a number of temperature sensing elements, there is no disclosure which teaches or suggest implementing a correcting means that corrects at least one of an obtained lateral width or a lateral width threshold as recited in Claim 5 based on the temperature measured by a temperature sensor in consideration of the change in hardness of the vehicle seat pad that is influenced by temperature change. It is thus respectfully submitted that a combination of the disclosures in

Wallace and *Hiroaki*, and the disclosure in *Katsu* by itself, would not have suggested an occupant detecting device having the combination of features recited in independent Claim 5. Accordingly, withdrawal of the rejection of record and allowance of this application are earnestly solicited.

New dependent Claims 11-15 read on the elected species and, together with dependent Claim 6-8, are allowable at least because of their dependence from allowable independent Claim 5. By virtue of this fact, additional distinguishing features and characteristics recited in these dependent claims are not addressed at this time.

Early and favorable action with respect to this application is respectfully requested.


Should any questions arise in connection with this application or should the Examiner believe that a telephone conference with the undersigned would be helpful in resolving any remaining issues pertaining to this application the undersigned respectfully requests that he be contacted at the number indicated below.

Respectfully submitted,

BUCHANAN INGERSOLL & ROONEY PC

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